F4/80 (6A545): sc-71085

SANTA CRUZ®

BIOTECHNOLOGY

The Power to Question

BACKGROUND

The epidermal growth factor (EGF)-TM7 family constitutes a group of class B G protein-coupled receptors, which includes CD97, EMR1 (EGF-like molecule containing mucin-like hormone receptor 1, designated F4/80 in mouse), EMR2, EMR3, FIRE and ETL. These family members are characterized by an extended extracellular region with several N-terminal EGF domains, and are predominantly expressed on cells of the immune system. The EGF-TM7 protein family are encoded by a gene cluster on human chromosome 19p13.3. The F4/80 molecule is solely expressed on the surface of macrophages and serves as a marker for mature macrophage tissues, including Kupffer cells in liver, splenic red pulp macrophages, brain microglia, gut lamina propria and Langerhans cells in the skin. F4/80/EMR1 undergoes extensive N-linked glycosylation as well as some O-linked glycosylation. The function of F4/80/EMR1 is unclear, but it is speculated to be involved in macrophage adhesion events, cell migration or as a G protein-coupled signaling component of macrophages.

CHROMOSOMAL LOCATION

Genetic locus: ADGRE1 (human) mapping to 19p13.3; Adgre1 (mouse) mapping to 17 D.

SOURCE

F4/80 (6A545) is a rat monoclonal antibody raised against cultured bone marrow-derived macrophages of mouse origin.

PRODUCT

Each vial contains 100 µg IgG$_{2a}$ in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

F4/80 (6A545) is recommended for detection of EMR1 of human origin, F4/80 of mouse origin and the corresponding rat homolog by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 µg per 1 x 10^6 cells).

Suitable for use as control antibody for EMR1 siRNA (h): sc-72157, F4/80 siRNA (m): sc-42865, EMR1 shRNA Plasmid (h): sc-72157-SH, F4/80 shRNA Plasmid (m): sc-42865-SH, EMR1 shRNA (h) Lentiviral Particles: sc-72157-V and F4/80 shRNA (m) Lentiviral Particles: sc-42865-V.

Molecular Weight of F4/80: 160 kDa.

Positive Controls: WEHI-231 whole cell lysate: sc-2213 or M1 whole cell lysate: sc-364782.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

SELECT PRODUCT CITATIONS

1. Degasperi, G.R., et al. 2009. Reactive oxygen species production is increased in the peripheral blood monocytes of obese patients. Metab. Clin. Exp. 58: 1087-1095.

2. Thelen, T., et al. 2010. The class A scavenger receptor, macrophage receptor with collagenous structure, is the major phagocytic receptor for *Clostridium sordellii* expressed by human decidual macrophages. J. Immunol. 185: 4328-4335.

3. Chang, H.J., et al. 2012. Bone marrow transplantation enhances trafficking of host-derived myelomonocytic cells that rescue intestinal mucosa after whole body radiation. Radiother. Oncol. 104: 401-407.

4. Leal, R.F., et al. 2013. Toll-like receptor 4, F4/80 and pro-inflammatory cytokines in intestinal and mesenteric fat tissue of Crohn's disease. Int. J. Clin. Exp. Med. 6: 98-104.

5. Majumder, M., et al. 2014. Prostaglandin E2 receptor EP4 as the common target on cancer cells and macrophages to abolish angiogenesis, lymphangiogenesis, metastasis, and stem-like cell functions. Cancer Sci. 105: 1142-1151.

6. Teillaud, J.L., et al. 2018. Exploring the role of tertiary lymphoid structures using a mouse model of bacteria-infected lungs. Methods Mol. Biol. 1845: 223-239.

7. Zuo, A., et al. 2019. Understanding the effect of anthocyanin extracted from *Lonicera caerulea L.* on alcoholic hepatosteatosis. Biomed. Pharmacother. 117: 109087.

8. Wang, S., et al. 2019. XIAOPI formula inhibits breast cancer stem cells via suppressing tumor-associated macrophages/C-X-C motif chemokine ligand 1 pathway. Front. Pharmacol. 10: 1371.

9. Zheng, Y., et al. 2020. XIAOPI formula inhibits the pre-metastatic niche formation in breast cancer via suppressing TAMs/CXCL1 signaling. Cell Commun. Signal. 18: 48.

10. Huang, R., et al. 2020. CCL5 derived from tumor-associated macrophages promotes prostate cancer stem cells and metastasis via activating β-catenin/Stat3 signaling. Cell Death Dis. 11: 234.

11. Hou, L., et al. 2020. Macrophage sphingosine 1-phosphate receptor 2 blockade attenuates liver inflammation and fibrogenesis triggered by NLRP3 inflammasome. Front. Immunol. 11: 1149.

12. Guo, W.R., et al. 2021. Metformin alleviates steatohepatitis in diet-induced obese mice in a SIRT1-dependent way. Front. Pharmacol. 12: 704112.

CONJUGATES

See **F4/80 (C-7): sc-377009** for F4/80 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.